

S/114/62/000/010/002/003  
E193/E383

AUTHOR: Lapidus, V.A., Candidate of Technical Sciences  
TITLE: Erosion-resistant, hard-facing alloy for hydroturbines  
PERIODICAL: Energomashinostroyeniye, no.. 10, 1962, 34 - 37  
TEXT: The object of the present investigation was to evaluate a number of hard-facing alloys and to choose those most suitable for building-up worn parts of the rotors of hydroturbines operating in mountainous regions where river waters carry a large proportion of very abrasive sand. The first series of experiments was conducted on a laboratory apparatus in which 35 test pieces could be tested simultaneously under conditions closely resembling those obtained in service.. The degree of wear was assessed by the loss in weight of specimens tested for 24 hours. In all, 31 types of hard-facing alloys were examined, mostly steels of various compositions and constitutions but also some Al- and Cu-base alloys. The hardness of deposits obtained with these alloys ranged from 60 - 650 HB. Some of the alloys that showed good erosion-resistance in laboratory tests were not suitable in industrial application, either because they could  
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only be successfully deposited on base metals preheated to a high temperature, or because they had low corrosion-resistance. The next series of experiments was therefore conducted on deposits obtained with a large number of electrodes based on the composition of electrode У-5 (TsN-5); water with a sand content of 5 g/litre was used in these tests, each of 12 hours duration. As a result, three electrodes (TsN-5, У-6 (TsN-6) and У-7 (TsN-7)), characterized by a low rate of erosion (about 0.1 g/h) combined with relatively high ductility, were selected for the final trials in which the electrodes were used to hard-face the leading edges of the blades of a radially-axial turbine rotor. Several conclusions were reached: 1) the mechanism of wear of the surface of a hard-facing alloy, caused by erosion due to the action of a jet of sand-carrying water consists of compression of the metal grains. All other factors being equal, the lower the hardness of the metal, the higher the degree of compression. 2) When all the grains are of the same hardness, compression is uniform and the metal retains its flat surface, which secures a very low degree of wear in the case of hard metals, soft

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materials wearing only slightly more under the same conditions.  
3) When grains of two or more phases of different hardnesses are present in the alloy, the softer grains are compressed first; as a result, the hard grains form protrusions which are rapidly broken up by the impact of sand particles in the water jet, thus causing rapid wear of the entire hard-faced area. The erosion-resistance of a hard-facing alloy depends therefore not only on its hardness but also <sup>on</sup> the homogeneity of its microstructure.  
4) In view of these considerations and on the basis of the results of the present investigation, hard-facing electrodes TsN-5, TsN-6 and TsN-7 can be recommended as suitable for use in the construction and repair of hydro-electric stations.  
There are 3 figures and 3 tables.

Card 3/3

LAPIDUS, V. I.

LAPIDUS, V. I. -- "Elements of the Method of Calculation of Single-Step  
'Nonclear' Hydrotransformers." Sub 21 Jun 52, State Sci Res Automobile and Automotive Inst (IAAM). (Dissertation for the Degree of Candidate in Technical Sciences).

SO: Vechernaya Pervya, January-December 1952

LAPIDUS, V. I.

HYDRODYNAMICA.

"Principles in the method of calculation of single-stage hydro-transformers." Reviewed by B. E. Tuchkov. Avt. trakt. prom. no. 8, 1952.

9. Monthly List of Russian Accessions, Library of Congress, November 1953, Uncl.

1. LAPINUS, V.-I.
2. USSR (600)
7. Research of the Character of the Flow of a Stream (current) in The Wheels of a Hydraulic Machine, Herald of Machine Construction No. 1, Jan 53
9. Compilation of Information of the USSR Machine and Machine Tools Industry Contained in Soviet Publications. [REDACTED]

LAPIUS, V.I., kandidat tekhnicheskikh nauk; OSIPYAN, A.V., kandidat tekhnicheskikh nauk; otvetstvennyy redaktor; ZIL'ZERBERG, Ya.G., inzhener, sekretar'; BRILING, N.R., doktor tekhnicheskikh nauk, professor; PEVZNER, Ya.M., doktor tekhnicheskikh nauk, professor; KHRUSHCHEV, M.M., doktor tekhnicheskikh nauk, professor; KALISH, G.G., doktor tekhnicheskikh nauk, professor; RAMAYYA, I.S., doktor tekhnicheskikh nauk; KOZLOVSKIY, I.S., kandidat tekhnicheskikh nauk; UVAROVA, A.F., tekhnicheskiy redaktor.

Experimental research on fluid flow in hydraulic torque converters.  
[Trudy] NAMI no.73:1-22 '54. (MIRA 8:2)

1. Direktor Nauchnogo avtomotornogo instituta (for Osipyan).  
(Oil hydraulic machinery)(Automobiles--Transmission devices)

Lapidus, V. I.

AID P - 4301

Subject : USA/Engineering.

Card 1/1 Pub. 128 - 1/26

Authors : Lipgart, A. A., Professor and V. I. Lapidus, Kand. Tech. Sci.

Title : The Path of Development of Automatic Power Transmission in Automobiles.

Periodical : Vest. mash., #3, p. 3-12, Mr 1956

Abstract : Review and general description of power transmissions used in automobiles of American (mostly), English and German production. Diagrams, 8 references, 1 Russian, 1948.

Institution : None

Submitted : No date

LAPIDUS, V.I.

PETROV, Vyacheslav Aleksandrovich; LAPIDUS, V.I., otvetstvennyy redaktor;  
KLENNIKOV, V.M., redaktor izdatel stva; KISELEVA, A.A., tekhnicheskiy  
redaktor.

[Principles of automatic control of automobile transmission] Osnovy  
teorii avtomaticheskogo upravleniya transmissiei avtomobilia. Moskva,  
Izd-vo Akad.nauk SSSR, 1957, 162 p.  
(Automobiles--Transmission devices) (MLRA 10:5)

LAPIDUS, Viktor Iosifovich, kandidat tekhnicheskikh nauk; PETROV,  
Vyacheslav Aleksandrovich, kandidat tekhnicheskikh nauk; OSTROVTSEV,  
A.N., kandidat tekhnicheskikh nauk, retsenzent; VOSCHININ, A.I.,  
doktor tekhnicheskikh nauk, redaktor; BAUMAN, I.M., redaktor  
izdatel'stva; UVAROVA, A.F., tekhnicheskiy redaktor

[Hydraulic transmission for automobiles] Gidravlicheskie transmissii  
avtomobilei. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit.  
lit-ry, 1957. 383 p. (MLRA 10:5)  
(Automobiles--Transmission devices)

LAPIDUS, Viktor Losifovich; KHAL'FAN, Yuriy Arkad'yevich; DIVAKOV, N.B.,  
red.; ZUYEVA, N.K., tekhn. red.

[Automobile automatic transmission] Avtomobil'nye avtomaticheskie  
korobki pereklich. Moskva, Nauchno-tekhn. izd-vo avtotransp. lit-ry,  
1958. 117 p. (MIRA 11:7)

(Automobiles--Transmission devices)

GAVRILENKO, Boris Aleksandrovich; MININ, Viktor Aleksandrovich;  
SEMICHASTNOV, I.P., dotsent, kand.tekhn.nauk, ratsenzent;  
LAPIDUS, V.I., kand.tekhn.nauk, red.; BOGOMOLOVA, N.F.,  
izdat.red.; ZUDAKIN, I.M., tekhn.red.

[Hydrodynamic couplings] Gidrodinamicheskie mifty. Moskva,  
Gos.izd-vo obor.promyshl., 1959. 332 p. (MIRA 13:2)  
(Oil-hydraulic machinery)

SOV/113-59-2-20/20

AUTHOR: Kalachev, L.D., Lapidus, V.I., Adamovich, A.V., Chapkevich, V.A., Dymshits, I.I., Candidates of Technical Sciences, Korchemnyy, L.V., and Konev, B.F.

TITLE: Critique and Bibliography (Kritika i bibliografiya)

PERIODICAL: Avtomobil'naya promyshlennost', 1959, Nr 2, pp 47-48 (USSR)

ABSTRACT: This is a critical review of the "Raschet i konstruirovaniye mashin, sbor." (Calculation and Design of Machines, Symposium), published by the Chelyabinskii politekhnicheskii institut (Chelyabinsk Politechnical Institute), Volume 10, Mashgiz, 1957.

ASSOCIATION: NAMI

Card 1/1

USCCOMM-DC-61005

LAPIDUS, V.I., kand.tekhn.nauk

Relationship between the efficiency of a hydraulic torque converter and Reynold's number. Avt.prom. no.7:19-20 Jl '60.  
(MIRA 13:7)

1. Gosudarstvennyy soyuznyy ordena Trudovogo Krasnogo Znameni  
nauchno-issledovatel'skiy avtomobil'nyy i avtomotornyy institut.  
(Automobiles--Transmission devices)

LAPIDUS, Viktor Iosifovich; PETROV, Vyacheslav Aleksandrovich; BREYGIN, D.B.,  
inzh., retsenzent; BINOVICH, Ya.Ye., kand. tekhn. nauk, red.; NAKHIM-  
SON, V.A., red. izd-va; EL'KIND, V.D., tekhn. red.; CHERNOVA, Z.I., tekhn.red.

[Hydromechanical transmissions for motor vehicles] Gidromekhaniche-  
skie peredachi avtomobilei. Izd.2., perer. i dop. Moskva, Gos.  
nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1961. 494 p.  
(MIRA 14:11)

(Motor vehicles—Transmission devices)

YESENOVSKIY-LASHKOV, Yuriy Konstantinovich, inzh.; POLYAK, David  
Grigor'yevich, kand. tekhn.nauk; LAPIDUS, V.I., red.;  
BODANOVA, A.P., tekhn. red.

[Automatic control of motor vehicles] Avtomatizatsiya  
upravleniya avtomobilem. Moskva, Avtotransizdat, 1963. 112 p.  
(MIRA 16:8)

(Motor vehicles) (Automatic control)

LAPIDUS, V. L.

Two cases of teratoma in newborns. Vop.ohn.mat. i det. 3 no.3:89-92  
Jl-Ag '58 (MIRA 11:8)

1. Iz Kaliningradskogo gorodskogo rodil'nogo doma No.1 (glavnyy  
vrach V.L. Lapidus).  
(INFANTS (NEWBORN)--ABNORMITIES AND DEFORMITIES)  
(TUMORS)

LAPIUS, V.L.

Initial experience in the work of the province maternity home. Zdrav.  
Ros. Feder. 3 no.12:31-34 D '59. (MIRA 13:4)

1. Iz Kaliningradskogo oblastnogo rodil'nogo doma.  
(KALININGRAD PROVINCE--MATERNITY HOMES)

LAPIDUS, V.L.

Labor involving giant fetuses. Vop.ohk.mat.i det. 7 no.8:53-57  
Ag '62. (MIRA 15:9)

1. Iz Kaliningradskoy oblastnoy akushersko-ginekologicheskoy  
bol'nitsy (glavnnyy vrach - zasluzhennyy vrach RSFSR V.L.Lapidus).  
(FETUS) (LABOR, COMPLICATED)

LAPIDUS, V.L., zasluzhenny vach RSFSR (Kalininograd)

Simple pedal-operated wash and shower stand for the wards for  
newborn children, as well as field and obstetrical centers.  
Fel'd. i skush. 27 no.9: 23-25 S'62. (MIRA 16:8)  
(~~KALININGRAD~~ INFANTS-BATHING)

GEL'BSHTEYN, A.I.; STROYEVA, S.S.; KUL'KOVA, N.V.; BAKSHI, Yu.M.;  
LAPIDUS, V.L.

Mechanism of the catalytic reactions in the partial oxidation  
and oxidative ammonolysis of propylene in the presence of  
 $\text{MoO}_3\text{--Bi}_2\text{O}_3$ . Neftekhimiia 5 no.1:118-125 Ja-F '65.  
(MIRA 18:5)

1. Nauchno-issledovatel'skiy fiziko-khimicheskiy institut imeni  
Karpova, Moskva.

GEL'BSHTEYN, A.I.; BAKSHI, Yu.M.; STROYEVA, S.S.; KUL'KOVA, N.V.; LAPIDUS,  
V.L.; SADOVSKIY, A.S.

Kinetics and mechanism of oxidative ammonolysis and partial  
oxidation of propylene on bismuth-molybdenum catalysts. Kin.  
i kat. 6 no. 6:1025-1032 N-D '65 (MIRA 19:1)

1. Fiziko-khimicheskiy institut imeni Karpova. Submitted July 28,  
1964.

L 52533-65 EWT(1)/EWA(h) Feb G1

UR/2585/64/000/007/0215/0233

14

ACCESSION NR: AT5012715

B4

AUTHOR: Volin, A.P.; Lapidus, V. Ya.

TITLE: Some peculiarities of elastic wave propagation in crystalline rocks

SOURCE: Voprosy dinamicheskoy teorii rasprostraneniya seismicheskikh voln, no. 7, 1964, 215-233

TOPIC TAGS: crystalline rock wave propagation, inhomogeneous seismic medium, surface velocity gradient, seismic wave velocity, crystalline rock velocity anisotropy, elastic wave propagation

ABSTRACT: The elastic wave propagation velocity within the upper crystalline rocks comprising the outer most layer of the earth's crust is still relatively unknown. Field position seismic observations and subsequent analyses of wave fields registered on seismograms show that such media cannot be approximated by the usual model of a laminar-isotropic medium but must be treated as continuously-inhomogeneous media characterized by a dominantly vertical velocity gradient (A.P. Volin, Voprosy razvedochnoy geofiziki, vol. 2, L. Gostoptekhizdat, 1962). Seismic investigations carried out in the

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characterized by a dominantly yellowish brown color and  
geofizika, vol. 2, L. Gospodekhizdat, 1962). Seismic investigations carried out in the  
Almalykskiy coal region of Uzbekistan already permit the establishment of certain

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regularities concerning the velocity characteristics of upper rocks. The present article describes parametric studies in the above-mentioned region with the hope that they will arouse the interest of seismologists in the peculiarities which may be observed in crystalline rocks under these and other geological conditions. A short discussion of the geological-petrographic characteristics of the Northern slopes of the Kuraminskiy range of Tien Shan is followed by a description of the methods for the study of the velocity characteristics of rocks, a list of various interconnections between the data obtained by various methods of investigation, the velocity-depth relationship results, and a description of the influence of the petrographic composition of rocks and the characteristics of anisotropy on the elastic wave velocities. The article also presents the

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eskiikh ydin, No. 4, 1962, Metodicheskaya tukovnaya po voprosam

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L 52533-55

ACCESSION NR: AT5012715

svoystv gornykh porod i poleznykh iskopayemykh, M., Gosgeotekhizdat, 1962; B. Ya. Gel' chinskiy, T. M. Tsymbal, D. K. Ozerov, G. V. Golikova, Voprosy dinamicheskoy teorii rasprostraneniya seismicheskikh voln, no. 4, 1962, Izd. LGU; T. I. Oblogina, V. B. Pilyp, S. Kochipay, Izv. AN SSSR, no. 9, 1962). Orig. art. has: 10 figures and 2 tables.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00

SUB CODE: ES

NO REF SOV: 010 OTHER: 002

llc  
Card 3/3

VOLIN, A.P.; LAPIDUS, V.Ya.; URAL'TSEVA, I.B.

Seismic prospecting in the deep geological mapping of the Andizkay region. Uzb. geol. zhur. 9 no.4:10-16 '65. (MIRA 18:9)

I. Geofizicheskiy i rest Gosudarstvennogo geologicheskogo komiteta.

LAPIDUS, E. L.

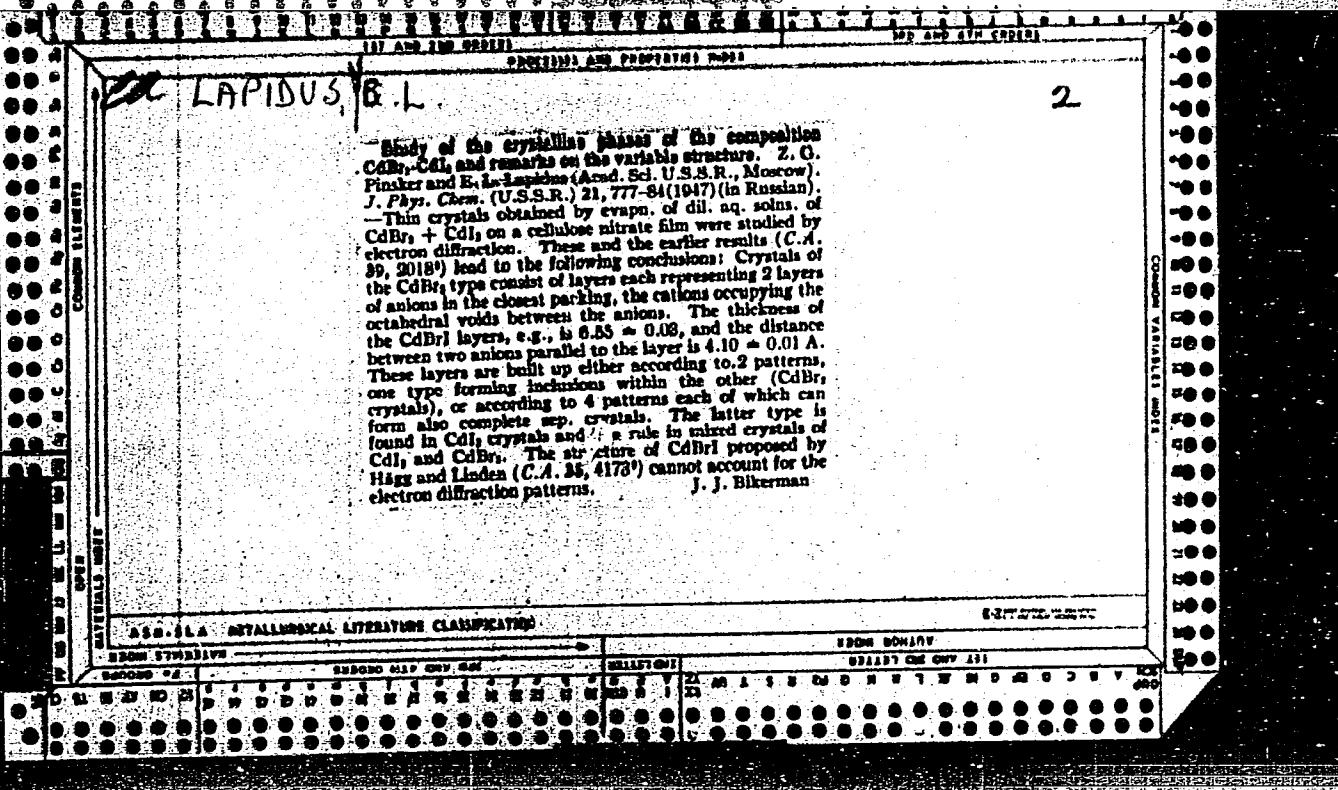
Z. G. Pinsker, E. L. Lapidus, and L. I. Tatarinova, "The electronographic investigation of the structure of kaolinite. P. 1017.

A theory has been worked out for the formation and the calculation of electronograms from monocrystalline and oriented polycrystalline samples for the monoclinic lattice. A point electronogram has been obtained from the nacrite monocrystal which makes it possible to determine the dimensions of the unit lattice of kaolin minerals in the base plane (ab) and to determine the translation group for them ( $\sqrt{m}$ ).

Institute of Geochemistry and Analytical Chemistry of the Acad. of Sciences U.S.S.R.

Institute of Crystallography, Moscow  
December 31, 1947

SO: Journal of Physical Chemistry (USSR) 22, No. 9, 1948



LA LAPIDUS, E.L.

**Nature of the Askangin clays and their mother rocks.** B. Zvyagin, R. I. Lapidus, and V. P. Petrov (Akad. Nauk U.S.S.R.), Doklady Akad. Nauk S.S.R. 68, 377-80 (1940).—The important montmorillonite clays of Askangin are formed by decompr. of biotite-andesite-trachyte tufts. Two types of montmorillonites are distinguished: the scaly-earthy clay ("askanglin"), and the colloidal "askangel." The first does not form stable suspensions in water; askangel, on the other hand, forms very stable suspensions of high thixotropy, and plasticity, but of low base-exchange capacity, in contrast to askanglin, which has a high capacity. The andesite-trachytes contain cavities with cristobalite, a mordenite-like fibrous zeolite, and K anorthoclase. The rock is glassy, with andesine phenocrysts, sanidine, and biotite. Delesite is the typical chlorite mineral formed by the autometamorphic reactions in the glass. The electron microscopic examination showed the spindle-shaped crystallites of this chlorite mineral, with the elementary cell dimensions  $a_0 = 0.22$ ;  $b_0 = 0.04$ ;  $c_0 = 15.1$  Å;  $\beta = 90^\circ 50'$ . They are compared to the previous structural data given by Pauling and Murchy. From the genetic viewpoint, the formation of askangel in deeper horizons, immediately above the mother rocks, and of askanglin in the higher horizons is related to

the particularly fine-scaly character of the first in the electron micrographs. It is, however, cryst. in its electron diffraction, but with widened and somewhat indistinct lines. The cell dimensions are  $a_0 = 0.17$ ;  $b_0 = 8.94$ ;  $c_0 = 0.05$  Å.;  $\beta = 90^\circ 57'$ , which are in good agreement with that of montmorillonite. The particles of askanglin have a much coarser-cryst. type, with indicated pseudohexagonal shapes, and much more distinct diffraction lines, on a strong amorphous background. All indications are given that in the askanglin more amorphous material is present than in askangel. The transition from askangel to askanglin is apparently combined with a thorough disturbance of the regularity of the structure, and the formation of amorphous material, but simultaneously with a coarser-scaly texture. The  $a_0$  and  $b_0$  dimensions are the same in both types. Askangel is the metasomatic product of mineralization of the glass in the mother rock, under definite phys.-chem. conditions, while askanglin represents a transition phase formed in surface-near horizons (kaolin type).

W. Eitel

Min. Geol. Sci., and Inst. Geochemistry and Anal. Chem. in v.t. Vernadskiy  
AS, USSR

PINSKER, Z.G.; CHZHOU TSZIN-LYAN [Chcu Ching-Jiang]; IMHOV, R.M.;  
LAPIDUS, Ye.L.

Determining the crystalline structure of the low-temperature  
phase of  $\alpha$ -Ag<sub>2</sub>Se. Kristallografiia 10 no.3:275-283 My-Je '65.  
(MIRA 18:7)

1. Institut kristallografiia AN SSSR.

BOCHKAREV, V. - kand. geol.-miner. nauk; NIKITINA, L.G., kand. geol.-miner. nauk; SHAPIRO, S.M., kand. geol.-miner. nauk; EYDINU'A, N.M., st. inzh.; GOLOBOROD'KO, G.L., inzh.; PERLIK, G.P., inzh.; BANDALETOV, S.M., kand. geol.-miner. nauk; VLADIMIROV, N.M., kand. geol.-miner. nauk; SADYKOV, A.M., kand. geol.-miner. nauk; MALYSHEV, Ye.G., ml. nauchn. sotr.; BERKAL'YEV, N./., st. inzh.; EYDINOV, Yu.I., st. inzh.; MUKHAMEDZHANC, S.M., kand. geol.-miner. nauk; ISABAYEV, T.T., st. inzh.; MOTU, V.V.A., inzh.; KOLOTILIN, N.F., kand. geol.-miner. nauk; LAPIDUS, Zh.D., inzh.; SHOYMANOVA, M.M., inzh.; YAREMCHUK, G.S., inzh.; BARBOT, D.-MARNI A.V., kand. miner. nauk [deceased]; MIKHAILOV, B.P., st. inzh.; SATPAYEV, K.I., akademik, glav. red. [deceased]; MEDOYEV, G.TS., otv. red.; DMITROVSKIY, V.I., red.; SEMENOV, I.S., red.; BRAILOVSKAYA, M.Ya., red.; KOROLEVA, N.N., red.

[Irtysh-Karaganda Canal; engineering geological conditions]  
Kanal Irtysh - Karaganda; inzhenerno-geologicheskie uslovia.  
Alma-Ata, Nauka, 1965. 169 p. (MIRA 18:5)

(Continued on next card)

LAPIGIN, I. V.

KORBANSKII, N.A., I.V. LAPIGIN

Samoletnye radiopelengatory i ikh primenenie. Moskva, 1941.  
Title tr.: Aircraft radio direction finders and their use.

NCF

SO: Aeronautical Sciences and Aviation in the Soviet Union, Library of  
Congress, 1955.

LAPIK, A.S.

U.S.S.R. / Human and Animal Physiology. Liver. T

Abs Jour: Ref Zhur-Biol., No 5, 1958, 22274.

Author : Lapik, A. S. Saratikov, A. C.

Inst. : Tomsk Medical Institute.

Title : The Participation of the Sulphydril Enzyme System of the Liver in the Mechanism of Bile Secretion.

Orig Pub: 5-I Pavlovsk. Sb. Tomskii med. in-d. Tomsk  
un-t 1956, 101-103.

Abstract: The isolated liver of cats was perfused through the portal vein under pressure 20 cm of water at 39°. The volume of bile secreted was determined at intervals of 30 min. during 2 hours. The addition to the perfusate of Cd Cl<sup>3</sup> (0.03-1.04%) reduced the secretion of bile, by the isolated liver, by 50-100%. The perfusion

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U.S.S.R. / Human and Animal Physiology. Liver.

T

Abs Jour: Ref Zhur-Biol., No 5, 1958, 22274.

Abstract: of the liver with a physiological solution only partly restored bile secretion. Cysteine, added to the perfusate (0.02%), after 30 min. of perfusion with the solution of CdCl<sub>3</sub>, has restored the bile secretion to 70-100% of the original volume. Cystine (0.02%) did not show any effect. It was concluded that the presence of the free sulphydryl enzyme group plays an important role in bile production.

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80

LAPIK, A.S.

Effect of the method of introducing rutin into the organism on  
its biological activity. Trudy TSBS no.5:77-82 '61. (MIRA 15:3)  
(Rutin)

LAPIK, A.S.; DEMINA, T.G.

Some species of shrubs of the Altai Mountains as a source  
of bioflavonoids. Izv. SO AN SSSR no.4 Ser. biol.-med. nauk  
no.1:70-72'63. (MIRA 16:8)

1. TSentral'nyy Sibirskiy botanicheskiy sad Sibirskogo otde-  
leniya AN SSSR, Novosibirsk.

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LAPIK, A.S.; DEMINA, T.P.

Fruit of some Altai shrubs as a source of biotlevoncids. Trudy  
TSSBS no.7:45-48 '64. (MTR4 17:11)

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CIA-RDP86-00513R000928610012-2"

LAPJK, A.S.; IZYUMOV, Ye.G.

Pharmacological properties of individual glycosides in Syrenia  
siliculosa. Izv. SO AN SSSR no.8. Ser. biol.-med.nauk no.2:126-  
129 '65. (MIRA 18:9)

1. Novosibirskiy institut organicheskoy khimii Sibirskogo  
otdeleniya AN SSSR.

LAPIK, A. S.

LAPIK, A. S. -- "The Problem of *Eupatorium Rotundifolium* and the Penny as New Cholagogues of Plant Origin." Sub 19 May 52, All-Union Sci Res Chemicopharmaceutical Inst imeni Sergo Ordzhonikidze (VNIKhFI). (Dissertation for the Degree of Candidate in Biological Sciences).

SO: Vechernaya Moskva January-December 1952

MINAYEVA, V.G.; LAPIK, A.S.

Vitamin P activity in the thoroughwax Bupleurum multinerve D.C.  
Trudy TSESS no.5:83-87 '61. (MIRA 15:3)  
(Bupleurum) (Vitamins-P)

L 33538-66 EWT(1)/EWT(m)/EWP(j) KW/RO/IM

ACC NR: AP6023471

SOURCE CODE: UR/0290/65/000/003/001/0094

AUTHOR: Lapik, A. S.

ORG: Novosibirsk Institute of Organic Chemistry, Siberian Department, AN SSSR

(Novosibirskiy institut organicheskoy khimii Sibirsogo otdeleniya AN SSSR)

TITLE: Experimental study of certain fluorinated aromatic compounds. Communication 1.  
Severe toxicity of monofluorobenzol, ortho-, meta-, and para-difluorbenzols, hexafluorobenzol, pentafluoraniline and pentafluorphenol

SOURCE: AN SSSR. Sibirskoye otdeleniye. Izvestiya. Seriya biologo-meditsinskikh nauk, no. 3, 1965, 91-94

TOPIC TAGS: fluorinated organic compound, toxicity, benzene, mouse, drug effect

ABSTRACT: The article gives the results of primary investigation of the severe toxicity of certain fluorinated aromatic compounds -- monofluorobenzene ( $C_6H_5F$ ), ortho-, meta-, and para-difluorbenzenes ( $C_6H_5F_2$ ), hexafluorobenzene ( $C_6F_6$ ), pentafluoraniline ( $C_6F_5-NH_2$ ), and pentafluorophenol ( $C_6F_5OH$ ) -- synthesized at the Novosibirsk Institute of Organic Chemistry, Siberian Department, Academy of Sciences USSR. Mice 5-6 months old were intoxicated with fumes of the fluorine compounds in a special chamber (7 liters volume per mouse). Exposure time was two hours. The mice were observed for 24 hours. The author concludes that fluorination of benzene intensifies the narcotic properties of the compound without essentially changing its toxicity. Fluorination of aniline and phenol intensifies the toxicity of the compounds with a notable change in the clinical aspects of poisoning, in that the neurotoxic effect is intensified. Orig. art. has: 3 tables. [JPRS]

SUB CODE: 06 / SUBM DATE: 22Jul64 / ORIG REF: 001 / OTH REF: 004

Card 1/1 ⑧⑨

UDC: 615.778.1

091C

1431

LAPIK, V. M.

LAPIK, V. M.: "The psychological principles of training the volitional qualities of the personality of the student as a part of the collective group (based on material from studying students in the ninth and tenth classes)." Moscow City Pedagogical Inst imeni V. P. Potemkin. Moscow, 1956. (Dissertation for the Degree of Candidate in Pedagogical Sciences.)

Source: Knizhnaya letopis' No 40 1956 Moscow

5(4)B(1)

AUTHORS: Lapik, V. S., Kalachev, P. M., Sov/76-32-10-34/39  
Stikin, Yu. A., Chmutov, K. V.

TITLE: Laboratory Thermostat With Independent Current Supply  
(Laboratornyy termostat s avtonomnym pitaniyem)

PERIODICAL: Zhurnal fizicheskoy khimii, 1958, Vol 32, Nr 10,  
pp 2455-2455 (USSR)

ABSTRACT: Thermostats, connected to a circuit and in working use must be periodically controlled every few days. A thermostat is described which is supplied by an accumulator and which has a special heat insulation. The vessel to be controlled is put into a Dewar (D'yuar) container filled with e.g., glycerin. The use of glycerin makes possible operation up to 300°. The heater (6 watt) is in the thermostat liquid (glycerin) and is fed by a 6-volt storage battery. The heater can be in spiral form and made of chromium/nickel. An ordinary relay scheme (Ref 1) serves for its control. The mixing through can be carried out by an air current (from a steel flask with compressed air). The thermostat described needs 2.5 - 3 watt at a temperature control of 75° for a liquid volume of 100ml.

Card 1/2

Laboratory Thermostat With Independent Current Supply SOV/76-32-10-34/33

The volume of the thermostat liquid is given to be 11.<sup>o</sup>  
The accuracy of temperature control amounts to  $\pm 0.25^{\circ}$   
and may be increased to  $\pm 0.1^{\circ}$  (by some modifications).  
There is 1 reference, 1 of which is Soviet.

SUBMITTED: February 27, 1958

Card 2/2

28 (4)

AUTHORS: Chmutov, K. V., Lapik, V. S.,  
Kalachev, P. M., Silkin, Yu. A.

SOV/76-33-7-32/40

TITLE: A Self-compensating Diaphragm Gauge

PERIODICAL: Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 7, pp 1655 - 1656  
(USSR)

ABSTRACT: A diaphragm gauge with automatic pressure compensation is described here (Fig). Pressure measurement is carried out by means of a thin membrane. The pressure change is transferred from the membrane to a mercury column, which puts a MN-145A-motor into operation. The latter lifts or lowers (according to the direction in which the membrane moves) a vessel filled with Hg or another liquid, which results in pressure balance. A relay that regulates the performance of the direct-current motor MN-145A is given in a scheme (Fig). It may also be applied to condenser alternating-current motors, e.g. to the type RD-07. For the application of a motor of the type SRD-2, however, the scheme of this relay must be somewhat modified. There is 1 figure.

Card 1/2

A Self-compensating Diaphragm Gauge

SOV/76-33-7-32/40

ASSOCIATION: Akademiya nauk SSSR, Institut fizicheskoy khimii, Moskva (Academy  
of Sciences of the USSR, Institute of Physical Chemistry, Moscow)

SUBMITTED: March 16, 1959

Card 2/2

S/844/62/000/000/020/129  
D290/D307

AUTHORS: Lapik, V. S., Fedorovich, Z. I. and Kabakchi, A. M.

TITLE: The effect of  $\text{Co}^{60}$   $\gamma$  radiation on acid solutions of  $\text{NaNO}_3$

SOURCE: Trudy II Vsesoyuznogo soveshchaniya po radiatsionnoy khimi. Ed. by L. S. Polak. Moscow, Izd-vo AN SSSR, 1962, 137-140

TEXT: The authors studied the effect of  $\text{Co}^{60}$   $\gamma$  radiation on solutions of  $\text{NaNO}_3$  in the concentration range  $10^{-3}$  - 6.0 M; the solutions were kept at pH 1 by  $\text{H}_2\text{SO}_4$  in the range  $10^{-3}$  -  $10^{-2}$  M and by  $\text{HNO}_3$  in the range  $10^{-2}$  - 6.0 M. The doses ranged from  $5 \times 10^4$  -  $2 \times 10^6$  rad at a rate of  $1.25 \times 10^5$  rad/hr. After radiolysis the concentrations of  $\text{H}_2\text{O}_2$  and nitrite ions and the volumes of evolved  $\text{H}_2$  and  $\text{O}_2$  were measured. The chief products of radiolysis were

Card 1/2

The effect of Co<sup>60</sup>...

S/844/62/000/000/020/129  
D290/D307

H<sub>2</sub>O<sub>2</sub> and H<sub>2</sub> below 0.1 M NaNO<sub>3</sub> concentration, and nitrite ions and O<sub>2</sub> above 1 M; the yields of radiolysis products were very low in the intermediate range of concentrations. The authors consider various possible mechanisms for the radiation-chemical processes in each range of concentration. There are 3 figures.

Card 2/2

LAPIKOV, N.; MIL'MAN, B.

Legal inspector at work. Sov.profsoiuzy 6 no.18:41-42 D '58.  
(MIRA 12:2)

1. Predsedatel' dorozhnogo komiteta profsoyuza rabotnikov  
zheleznodorozhnogo transporta Sverdlovskoy zheleznoy dorogi  
(for Lapikov). 2. Pravovoy inspektor Sverdlovskogo soveta  
profsoyuzov (for Mil'man).  
(Labor inspection)

LAPIKOV, N.

For a 7-hour workday without decreasing productivity. Sov.prof-  
sciuz, 16 no. 9:27-29 My '60. (MIRA 13:?)

1. Predsedatel' Dorozhnogo Komiteta profsoyusa rabotnikov zhelez-  
nodorozh'nogo transporta Sverdlovskoy zheleznay dorogi.  
(Sverdlovsk Province--Railroads)  
(Hours of labor)

LAPIKOV, N.; PROSHKO, Ya.

Legal consultation on a communal basis. Sov. profsoiuzy 17.  
no. 7:42 Ap '61. (MIRA 14:3)

1. Zamestitel' predsedatelya komiteta profsoyuza Nizhne-Tagil'skogo  
metallurgicheskogo kombinata im. V. I. Lenina (for Lapikov). 2. Za-  
veduyushchiy neshtatnoy yuridicheskoy konsul'tatsiyey Nizhne-  
Tagil'skogo metallurgicheskogo kombinata im. V. I. Lenina (for  
Proshko).

(Labor laws and legislation)

IAPIKURA, V., kand.tekhn.nauk

Low-temperature properties and pumpability of diesel fuels. Avt.  
transp. 38 no.2:26-28 F '60. (MIRA 13:6)  
(Diesel fuels--Testing)

BONDARENKO, V.; LAPIN, A.; SMIRNOV, D.

State Bank's business and people. Den. i kred. 19 no.9:73-80  
S '61. (MIRA 14:9)

1. Upravlyayushchiy Kazakhskoy respublikanskoy kontoroy Gosbanka  
(for Bondarenko). 2. Glavnnyy bukhgalter Vologodskoy oblastnoy  
kontory Gosbanka (for Lapin). 3. Upravlyayushchiy Volokolamskim  
otdeleniyem Gosbanka (for Smirnov).

(Bank and banking)

LAPIN, A. A.

"Clinical-Anatomical Observations of the Effect of Sinestrol on Adenoma of the Prostate." Cand Med Sci, Leningrad State Pediatrics Medical Inst, Leningrad, 1955. (KL, No 16, Apr 55)

SO: Sum. No. 704, 2 Nov 55 - Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (16).

LAPIN A.A.

Synestrol therapy of prostatic adenomas. A. A. Lapin  
(Leningrad Pediat. Med. Inst.), *Urologiya* 21, No. 2,  
19-25 (1958).—Observations were made in over 100 patients  
having 3rd stage prostatitis (prostatic adenomas). Some  
patients were used as controls. Treated patients were  
given morning and night intramuscular injections of 60-  
80 mg. of domestic synestrol for periods of 60-90 days.  
Marked secondary effects were observed such as swelling  
and increased sensitivity of the breasts, fatty deposition  
in the region of the breasts, increased pigmentation of the  
nipples, the scrotum and other regions of the skin, general  
feminization and sexual impotency of varying duration.  
Histologic studies of the adenomas indicated certain  
clear-cut changes. However, clinically, therapeutically  
and histologically no noteworthy differences were discernible  
between the controls and the treated cases. B. S. L.

SOV/24-58-11-40/42

AUTHOR: Lapin, A. A. (Vorkuta)

TITLE: Establishing the Grade of Coal from an Oxidised Specimen  
(Ustanovleniye marki uglya po okislennomu obraztsu)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh  
Nauk, 1958, Nr 11, pp 145-148 (USSR)

ABSTRACT: In investigating Pechora coals of various degrees of decarburisation, a regular increase was established on a large number of the specimens of the total content of phenol and carboxyl hydroxyls during the process of oxidation. By comparing the total content of hydroxyls with the changes of the hydrogen content in the coals during oxidation, a method was developed by the author for establishing the grade of the coal from the oxidation of the specimen (Ref 5). Further experiments proved that the method is also applicable for Donbass and Kuzbass coals. In this paper this method is described in some detail and data are given which were obtained for twenty-two different coals (Kuzbass, Donbass, Pechora).

Card1/2

Establishing the Grade of Coal from an Oxidised Specimen  
SOV/24-58-11-40/42  
There are 3 figures, 3 tables and 7 references, all of  
which are Soviet.

SUBMITTED: July 3, 1957

Card 2/2

LAPIN, A.A. (Leningrad, ul. Nekrasova, 40, kv.22); KURENNOV, N.V.

Late results of prostate cancer treatment. Vop onk. 8 no. 10:  
(MIRA 17:7)  
96-100 '62.

1. Iz urologicheskoy kliniki Vojennno-meditsinskoy ordena Lenina  
akademii (nachal'nik - prof. G.S.Grebenshchikov) i kafedry  
fakul'tetskoy khirurgii (zav. - prof. A.A.Rusanov) Leningrad-  
skogo pediatricheskogo meditsinskogo instituta.

LAPIN, A.A., kand.med.nauk; KURENNOV, N.V.

Combined hormonal treatment of cancer of the prostate gland. Trudy I.P.MI  
31 no.2:72-81 '63. (MIRA 17:10)

I. Iz kafedry fakul'tetskoy khirurgii Leningradskogo pediatricheskogo  
meditsinskogo instituta.

LAPIN, A.A.

SHCHERBAKOV, S.P. and A.A. LAPIN

Ob izmenenii v polete temperaturnykh rezhimov motora. (Tekhnika vozдушного флота,  
1943, no. 9, p.6-7, diagrs.)

Title tr.: Changes in temperature conditions of engines in flight.

TL504.Th 1943

SO: Aeronautical Sciences and Aviation in the Soviet Union, Library of Congress,  
1955

LAPIN, A. A.

"Calculation and Design of the Elastic Elements of Pneumatic Garters." Thesis  
for degree of Cand. Technical Sci, Sub 9 Oct 50, Moscow Order of Labor Red Banner  
Higher Technical School imeni N. E. Bauman

Summary 71, 4 Sep 52, Dissertations Presented for Degrees in Science and Engineering  
in Moscow in 1950. From Vechernyaya Moskva. Jan-Dec 1950.

LAPIN, A. A.

"Calculation of the Flexible Element of a Pneumatic Suspension," Inzh. Sbor., Vol. 9,  
pp 131-142, 1951

Gives tested method of calcg durability of flexible element of a pneumatic suspension. States use of such suspensions (rubber-cord casing of revolution) in automobiles and airplanes significantly expanded in recent years. Advantages: suspension rigidity easily controlled by changing air pressure, wide range of characteristics obtainable from one standard casing type, decreased weight of airplane landing gear, withstands up to 10 million cycles of load without casing damage. Submitted January 20, 1950.

257T54

"APPROVED FOR RELEASE: 08/31/2001

CIA-RDP86-00513R000928610012-2

LAPIN, A.A., kandidat tekhnicheskikh nauk.

Rubber cord shells as elastic and power elements in machines. (Design and  
computation.) [Trudy] MVTU no.16:5-35 '52. (MLRA 6:6)  
(Shock absorbers)

APPROVED FOR RELEASE: 08/31/2001

CIA-RDP86-00513R000928610012-2"

LAPIN, A.A., kandidat tekhnicheskikh nauk.

Graphic method in the computation of rubber cord shells. [Trudy] MVTU no.  
16:36-54 '52. (MLRA 6:6)  
(Shock absorbers)

1. BOL'SHIKH, A. S. and LAPIN, A. A. and YETKIN, L. G.
2. USSR (600)
4. Testing Machines
7. Resonance type of machine for fatigue testing. Vest.mash. 32 no. 16, 1952.
9. Monthly List of Russian Accessions, Library of Congress, February 1953. Unclassified.

LAPIN, A. A.

"Calculating the Working Element of Pneumatic Rubber-Cord Couplings" an article in  
the book "Computing the Stability, Hardness and Creep of Elements in Machine  
Construction", Mashgiz, 1953, p. 151.

LAPIN, A.A., dotsent, kandidat tekhnicheskikh nauk.

Calculation of the working member of pneumatic rubber-cord couplings.  
[Trudy] MVTU no.26:151-167 '53. (MLRA 7:5)  
(Pneumatics) (Couplings) (Elastic plates and shells)

SOV/124-58-1-1254

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 1, p 156 (USSR)

AUTHOR: Lapin, A. A.

TITLE: The Plain Deformation of a Rubber-cord Fabric (Ploskaya deformatsiya rezino-kordovoy tkani)

PERIODICAL: V sb.: Raschety na prochnost' v mashinostroyenii. Moscow, Mashgiz, 1955, pp 87-99

ABSTRACT: The author proposes considering the rubber-cord fabric as a uniform, anisotropic medium for which the relationship between stresses and strains (relative to the case of plane deformation) can be expressed by means of six averaged elastic constants. The derivation of formulas for these constants in terms of the elastic characteristics of the rubber and the thread, as well as geometric quantities that characterize the design shape of the fabric, is provided.

Reviewer's name not given

Card 1/1

LAPIN, H. H.

24(0); 25(2) PHASE I BOOK EXPLOITATION JUN/2037

**Библиография технического utilization И.Е. Буянова**  
**научно-технического общества Маштрансстроя:**  
**Сборник. Вып. 1. Маштрансстрой. [специал.] Design for**  
**Strength in Mechanical Engineering; Collection of Articles]**  
**Москва, Машигиз, 1958. 244 P. [Series: Its: Treaty 89]**  
**3,300 copies Printed.**

**Ed.:** O.A. Mikolayev, Doctor of Technical Sciences, Professor, Honored Worker in Science and Technology; M.D. Publishing House: N.P. Chernyshev; Tech. Ed.; B.I. Model; Managing Ed. for Literature on Heavy Machine Building (Masnigiz); S.Ya. Golovin, Engineer.

**PURPOSE:** This collection of articles is intended for engineering staffs in the machine-building industry and may be useful to scientific workers and senior students of mechanical engineering viruses.

**COVERAGE:** The articles cover the graphoanalytical method of designing circular symmetrically loaded reinforced plates, methods of designing rotating heated disks for transverse bending, and calculation of preloaded bell-shaped springs. Also discussed are differential equations for deformation of rubber-cord shells of rotation, the theory of flexure of rubber-cord hose, and stability problems of elastic cylindrical shells. Results of experimental investigations of strength and ductility of conventional steels and other materials are presented. Several articles are devoted to problems of vibrations in machinery. There are 78 references, 71 Soviet, 2 English, and 1 French.

**LAPIN, A.A. Candidate of Technical Sciences, Docent. Investigation of Flexure of Rubber-cord Cylindrical Shells**  
**Engineer. Determining the Lower Critical Pressure for an Elastic Cylindrical Shell and Behavior of the Shell Following Buckling**  
**Solutions of the problem is divided to be new and simple. Several Examples of design are presented. A comparison is made with results obtained by methods of other authors.**

**LAPIN, A.A. Candidate of Technical Sciences, Docent. Investigation of Flexure of Rubber-cord Cylindrical Shells**  
**This article presents results of work done in 1950 with V.L. Biderman at the Nauchno-Issledovatel'skiy Institut shimanoy proizvodstviya (Scientific Research Institute for the Tire Industry). The possible forms of classic equilibrium of a rubber-cord flexible hose under internal pressure are analyzed.**

**BIDERMAN, V.L. Candidate of Technical Sciences. Differential Equations for Deformation of Rubber-cord Shells of Rotation. The article investigates General cases of deformation in rubber hoses, tires, shock absorbers, etc., subjected to internal pressure. A method is presented for analyzing a cylindrical longitudinally fastened shell under arbitrary periodic loading.**

**BIDERMAN, V.L. Candidate of Technical Sciences. Differential Proportions in I and I Sections**  
**The article investigates General cases of deformation in T, I, and I cross sections for castings or weldments designed for bending.**

**ЛИХАЧЕВ, К.К. Candidate of Technical Sciences, Docent. Comparison of Characteristics of Materials Under Uniaxial Tension and Compression**  
**The article is based on experimental data obtained at the Department of "Strength of Materials" at MFTU (Moscow Higher Technical School Imeni N.E. Baumana). The author points out the necessity of establishing a method for complete testing of materials in tension and compression in order to correct some not too well-founded views on the characteristics of materials. Many stress-strain diagrams and tables showing the mechanical properties of several materials are included.**

LAPIN, A.A., kand.tekhn.nauk, dotsent

~~Investigating the bending of rubber-cord cylindrical shells. [Tridy]~~  
MVTU no. 39:111-118 '52. (MIRA 12:7)

(Elastic plates and shells) (Rubber goods)

28(5)

SOV/32-25-4-32 '71

AUTHORS: Lapin, A. A., Sinyavskiy, V. S., Vedenkin, S. G.

TITLE: Testing Metals for Corrosion Fatigue on an Electromagnetic Machine of the Natural-vibration Type (Ispytaniye metallov na korroziynuyu ustalost' na elektromagnitnoy mashine avtokolebatel'nogo tipa)

PERIODICAL: Zavodskaya Laboratoriya, 1959, Vol 25, Nr 4, pp 461-463 (USSR)

ABSTRACT: For studying the corrosion-fatigue resistance of aluminum alloys, new testing methods were developed which permit the kinetics of cracking to be determined. The machine suggested represents, in principle, an electromechanical generator with reverse coupling (Fig 1). The load frequency is determined by the fundamental frequency of the sample and can be changed in the range of from 30 to 200 cycles. The sample itself practically acts as a dynamic damper for the elastic element between the electromagnets. The sketch of the machine shows that selenium rectifiers VSA-5, an electromechanical counter SB-1 M-100, computing devices BK-3 with cathodes MTKh-90, as well as a microscope MPV-1 (for measuring the oscillation amplitude) and microscope MBS-2 (for observing the sample) are used. On the

Card 1/3

T-10/5

SOV/32-25-4-32/71

Testing Metals for Corrosion Fatigue on an Electromagnetic Machine of the  
Natural-vibration Type

machine described, samples of the aluminum-magnesium alloy AMG-6T (5.87% Mg, 0.60% Mn, 0.22% Si, 0.01% Cu, 0.14% Fe and 0.1% Ti) with the mechanical characteristics:

$\sigma_{0.2} = 19 \text{ kg/mm}^2$ ,  $\sigma_B = 38 \text{ kg/mm}^2$  and  $\delta = 22\%$  were tested. A comparison of the destruction occurred was made by means of the standard generator ZG-12; a beam tube of the oscillograph EO-6 was used here. The samples were tested in air, distilled water and 3% NaCl solution. Satisfactory results were obtained (Fig 3) and - according to the character of the curves obtained (Fig 4), it was stated that the fatigue process in air can be divided into three stages. The propagation of cracks occurs mainly transcrystallitically according to the position of the  $\beta$  phase ( $\text{Al}_3\text{Mg}_2$ ). There are 4 figures and 6 references, 5 of which are Soviet.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut zheleznodorozhno-go transporta (All-Union Scientific Research Institute of  
Card 2/3

LAPIN, A.A.

PHASE I BOOK EXPLOITATION

SOV/3986

Malakhovskiy, Yakov Emmanuilovich and Aleksandr Al'bertovich Lapin  
Stsepleniya (Clutches) Moscow, Mashgiz, 1960. 191 p. (Series: Proyektirovaniye  
avtomobilya) Errata slip inserted. 3,500 copies printed.

Reviewer: A.L. Zilov; Ed. (Title page): A.A. Lipgart, Professor; Ed. (Inside  
book): A.K. Frumkin; Ed. of Publishing House: S.L. Martens; Tech. Ed.:  
A.F. Uvarova; Managing Ed. for Literature on Automotive Transport, and  
Agricultural Machine Building (Mashgiz): I.M. Bauman, Engineer.

PURPOSE: This book is intended for technical personnel in the automobile industry  
and in automobile transportation.

COVERAGE: This book consists of two parts, the first dealing with truck clutches  
and the second with their control. The authors describe the constructions and  
parameters considered in selection of size of clutches and clutch controls,  
giving examples of design and calculation. Only the sub-chapter "Determination  
of characteristics and design for strength of Belleville springs" was written

Card 1/5

Clutches

sov/3986

by A.A. Lapin; the rest of the book waswritten by Ya.E. Malakhovskiy. No personalities are mentioned. There are 36 references: 23 Soviet, 6 English, 4 French, and 3 German.

## TABLE OF CONTENTS:

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Card 2/5

LAPIN, A.A.

The 1L87 automatic line for machining exhaust collectors. Biul.  
tekh.-ekon.inform. no.7:35-37 '61. (MIRA 14:8)  
(Machine tools) (Automation)

MALAKHOVSKIY, Yakov Emmamuilovich; LAPIN, Aleksandr Al'bertovich;  
VEDENEYEV, Nikolay Konstantinovich; LIPGART, A.A., doktor  
tekhn. nauk, prof., red.; VASIL'YEVA, I.A., red. izd-va;  
MODEL', B.I., tekhn. red.

[Cardan transmissions] Kardannye peredachi. Pod red. A.A.  
Lipgarta. Moskva, Mashgiz, 1962. 153 p. (MIRA 15:9)  
(Motor vehicles—Transmission devices)

RAVKIN, Genrikh Oskarovich; ROTENBERG, R.V., doktor tekhn. nauk,  
retsenzent; LAPIN, A.A., kand. tekhn. nauk, red.; EL'KIND, V.D.,  
tekhn. red.

[Pneumatic suspension of motor vehicles] Pnevmaticheskaya podveska  
avtomobilia. Pod red. A.A.Lapina. Moskva, Mashigz, 1962. 287 p.  
(MIRA 15:6)

(Motor vehicles--Springs)

38223  
S/032/62/028/006/017/025  
B108/B104

10.8100

AUTHOR: Lapin, A. A.

TITLE: Measurement of local deformations by means of large-base strain gages

PERIODICAL: Zavodskaya laboratoriya, v. 28, no. 6, 1962, 721 - 723

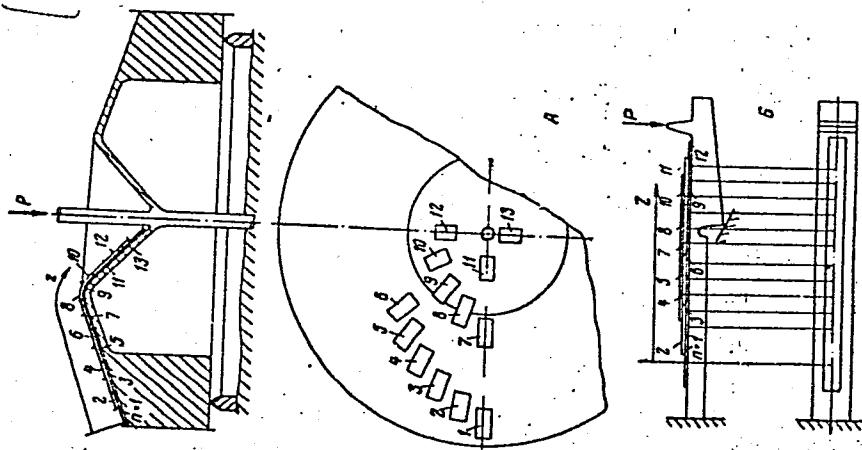
TEXT: A method is given of measuring deformation in the region of stress concentration with the aid of large-base wire strain gages. The strain gages are mutually displaced as shown in Fig. 1. The deformations on the body can then be determined from the average deformations on the individual strain gages. There are 3 figures.

Card 1/2

Measurement of local deformations ...

S/032/62/028/006/017/025-  
B108/B104

Fig. 1



Card 2/2

LAPIN, A.A., kand.med.nauk

Complications in adenomectomy. Trudy IPMI 31 no.2:105-113 '63.  
(MIRA 1730)  
1. Iz kafedry fakul'tetskoy khirurgii Leningradskogo pediatricheskogo  
meditsinskogo instituta.

LAPIN, A.A.

Measurement of local deformations by means of strain  
gauges with a large base. Zav.lab. 28 no.6:721-723  
'62.

(MIRA 15:5)

(Deformations (Mechanics))  
(Strain gauges)

LAPIN, A.D., Cand Phys-Math Sci -- (diss) "On the theory of wave dispersion of waves in irregular waveguides." Mos, [ Publishing House Acad Sci USSR], 1958 8 pp (Acad Sci USSR. Acoustics Inst), 130 copies (IL, 24-58,115)

-4-

LAPIN, A. D.

"Wave Scattering in Randomly Inhomogeneous Wave-Guides."

paper presented at the 4th All-Union Conf. on Acoustics, Moscow, 26 May - 2 Jun 58.

SOV-46-4-3-8/18

AUTHOR: Lapin, A. D.

TITLE: Scattering of Sound Waves in Irregular Wave Guides  
(Rassseyaniye zvukovykh voln v neregulyarnykh volnovodakh)

PERIODICAL: Akusticheskiy Zhurnal, 1953, Vol 4, Nr 3, pp 267-274  
(USSR)

ABSTRACT: The presence of irregularities in the medium which fills an acoustic waveguide leads to the scattering of sound waves which are propagated within the guide. If the waveguide is sufficiently long, even very small irregularities may produce a real change in the output field. The problem of scattering on small irregularities within waveguides is very difficult to solve and has so far been only solved in the first approximation by the method of small perturbations, i.e. in the case where the scattered field is small compared with the incident field (Ref.1). Rytov's method has been modified and used in the present paper to treat both the case of small fluctuations in the parameters of the medium and the case of rough walls. The scattered field is found and expressed as a superposition of normal

Card 1/2

SOV-46-4-3-8/18

Scattering of Sound Waves in Irregular Wave Guides  
waves for the waveguide in the absence of irregularities.  
There is 1 figure and 5 Soviet references.

ASSOCIATION: Akusticheskiy institut AN SSSR, Moskva (Acoustical  
Institute of the Academy of Sciences of the USSR, Moscow)

SUBMITTED: July 27, 1957.

1. Sound--Scattering    2. Waveguides--Performance

Card 2/2

AUTHOR:

Lapin, A.D.

20-1-15/58

TITLE:

The Scattering of Sound Waves in Non-Regular Wave Guides  
Rasseyaniye zvukovykh voln v neregulyarnykh volnovodakh)

PERIODICAL:

Doklady AN SSSR, 1958, Vol. 118, Nr. 1, pp. 55.-58 (USSR)

ABSTRACT:

Until now the problem of the scattering of sound at the small irregularities in a wave guide were solved only in the first approximation of the method of small disturbances. The present work generalizes the solution of the problem also to such cases where the scattered field is not weak in relation to the entering field. The author investigates the weak fluctuations of the parameters of the medium filling the wave guide as well as the case with rough walls of the wave guide. The author assumes a rectangular cross section of the wave guide and, for reasons of simplicity, restricts on the plane problem. The three-dimensional problem can be solved in a completely analogous way. As entering wave a simple wave with the number m is chosen:  $\varphi_0(x, z) = e^{ikx} \cos k_m z$ . Here the denomination is the same as in the preliminary work of M. A. Isakovich (reference 1). The scattered field is put down here in the form of a superposition of normal waves of the form

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corresponding to a wave guide without irregularities, i. e. the approximation method of Rytov is used for everyone of the plane waves. For the potential of the field in the right wave guide corresponding to this approximation an approximation expression is put down here. In the case of small inhomogeneities the relations deduced here are valid only for such a scattered field which is weak against the entering field. With great ingeneities, however, this restriction does not apply. The field in the wave guide after the passage of the inhomogenous part by a sum of normal waves (as they correspond to no inhomogeneities) is represented. For the statistical function  $\mu$  the mean squares of the amplitudes of these normal waves are represented for the case  $m = 0$ . A diagram shows the calculated intensities of the scattered normal waves of first order as functions of the reduced length of the inhomogenous part. A special case is calculated in the end. There are 1 figure and 2 references, 2 of which are Slavic.

ASSOCIATION: Acoustic Institute of the AN USSR (Akusticheskiy institut Akademii nauk SSSR)

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LAPIN, A.D.

PHASE I BOOK EXPLOITATION

SOV/5487

Moscow. Tsentral'nyy aero-gidrodinamicheskiy institut.

Promyshlennaya aerodinamika. vyp. 18: Shumoglusheniye (Industrial Aerodynamics).  
v. 18: Muffling) Moscow, Oborongiz, 1960. 106 p. Errata slip inserted.  
3,100 copies printed.

Sponsoring Agency: Tsentral'nyy aero-gidrodinamicheskiy institut imeni Prof.  
N. Ye. Zhukovskogo.

Ed. (Title page): Ye. Ya. Yudin, Doctor of Technical Sciences; Ed.: A.S. Ginevskiy,  
Candidate of Technical Sciences; Ed. of Publishing House: E.A. Shekhtman;  
Tech. Ed.: N.A. Pukhlikova; Managing Ed.: A.S. Zaymovskaya, Engineer.

PURPOSE: This collection of articles is intended for engineers and scientific  
personnel specializing in the field of industrial aerodynamics and acoustics  
and the problem of muffling and noise suppression in equipment involving  
airflow.

COVERAGE: The collection consists of nine reports dealing with problems of the  
generation and muffling of noise in various types of aerodynamic equipment.

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## Industrial Aerodynamics (cont.)

Also covered are methods for measuring noise and analyzing its spectral distribution. No personalities are mentioned. References accompany most articles.

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## Industrial Aerodynamics (Cont.)

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AC/dwm/mas  
9-19-61

S/046/60/006/02/11/019  
B014/B014

AUTHOR:

Lapin, A. D.

TITLE:

Sound Propagation in a Waveguide With Rectangular Slots  
In Its Walls

PERIODICAL: Akusticheskiy zhurnal, 1960, Vol. 6, No. 2, pp. 237-243

TEXT: In the article under review, the author establishes an exact theory of sound diffraction in a waveguide with a rectangular slot (Fig. 1). Formulas are derived for the sound field  $p$  in the waveguide and for the sound field  $p_1$  in the slot. The boundary conditions for  $p$ , which are satisfied by a proper choice of the coefficients  $M_{nq}$ , are given. Thus, formulas (7) - (9) are obtained for  $p$ . The infinite series (10) and (11) are given for the coefficients contained in these formulas. The system of algebraic equations (12) permits the determination of the total field  $P$  in the waveguide. The amplitudes and phases of the perpendicular ordinary standard waves were calculated from formulas developed in this article and are shown in the diagrams of Figs. 2-6. Next, these diagrams

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Sound Propagation in a Waveguide With  
Rectangular Slots in Its Walls

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are discussed for various parameters of the waveguide and the slot. The diagrams of Figs. 7 and 8 show the frequency dependence of the square of the amplitudes for two slots. These diagrams indicate that it is more convenient to use two slots for the widening of the frequency band of those waves which are to be prevented from passing through the waveguide. Fig. 8 shows the frequency dependence of the amplitude square for a waveguide with two different slots. A strong interaction between the slots is observable. Here, a narrow audio-frequency range between the frequencies of the individual slots is allowed to pass through the waveguide. There are 8 figures and 11 references: 3 Soviet, 7 American, and 1 German.

ASSOCIATION: Akusticheskiy institut AN SSSR Moskva (Institute of  
Acoustics of the AS USSR, Moscow)

SUBMITTED: December 25, 1959

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Card 2/2

LAPIN, A.D.

Sound propagation in a waveguide with protruding pieces on its  
walls. Akust. zhur. 7 no.1:97-99 '61. (MIRA 14:4)

1. Akusticheskiy institut AN SSSR, Moskva.  
(Sound—Transmission)

17.1350

24.1700

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S/046/61/007/004/006/014  
B139/B102

AUTHOR:

Lapin, A. D.

TITLE: Effect of the motion of a medium on the propagation of sound through a waveguide with volume resonators at its walls

PERIODICAL: Akusticheskiy zhurnal, v. 7, no. 4, 1961, 446-449

TEXT: Resonators intensely reflecting certain audio frequencies are frequently used in architecture as sound deadeners. The efficiency of such resonators is characterized by the ratio of entering to emerging sound energy. In this paper the author continues earlier work (Akust. zh. 1961, L, 2, 218-223). Every field in a waveguide may be represented as a superposition of normal waves of various modes. Normal waves with the subscripts (modes)<sub>m,q</sub> in a waveguide through which a medium moves with constant velocity  $U$  are described by

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$$\Phi_{mq}(x, y, z) = A_{mq} \exp [i(x_{mq}x - \Omega t)] \cos(k_{my}y) \cos(k_{qz}z), \quad (2).$$

$$x_{mq} = -\frac{(k\beta - \xi_{mq})}{(1 - \beta^2)}, \quad \xi_{mq} = \sqrt{(k^2 - k_{my}^2 - k_{qz}^2) + \beta^2(k_{my}^2 + k_{qz}^2)},$$

$$\Omega = \left\{ \omega + U \sqrt{\left(\frac{\omega}{c}\right)^2 - k_{my}^2 - k_{qz}^2} \right\}, \quad k = \Omega/c, \quad \beta = U/c.$$

$k_{my} = m\pi/b$ ,  $k_{qz} = q\pi/d$ ;  $d$  denotes the  $z$ -length of the waveguide,  $c$  the velocity of sound through the medium at rest,  $A_{mq}$  is the wave amplitude,  $\omega$  the frequency. The incoming field  $\phi_0$  is assumed to be a normal wave, with the amplitude

$$\phi_0(x, y, z) = \exp [i(x_{r0}x - \Omega t)] \cos(k_{ry}y) \cos(k_{rz}z). \quad (A).$$

The diffracted field in the guide is  $\phi$ , and  $\phi_1$  is the field in the resonator cavity. The continuity equations yielded the boundary conditions and, finally, the amplitude of the penetrating normal wave of the modes  $m, q$ :

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$$A_{mq} = \sum_n \frac{x_{mq} M_{nq}}{b_0 m b_{mq} (k_{nx}^2 - x_{mq}^2)} \left( 1 - \beta \frac{k_{nx}^2}{k x_{mq}} \right) [1 + (-1)^{n+1} e^{-i k_{mq} a}]; \quad (5).$$

The corresponding amplitude of the reflected normal wave is determined

from the same formula, only with the substitution  $\xi_{mq} = -\frac{k_f + s_{mq}}{1 - f^2}$  in the

place of  $\zeta_{mq}$ . The approximative solution predicts perfect sound insulation at the resonance point ( $kh = \pi/2$ ), just like in the case of a medium at rest, whereas the exact theory correctly renders the decrease of sound insulation to its final value when a stream is present. The calculated data are qualitatively consistent with the experimental results except for the resonance region where the theory predicts higher sound insulation values. The cause for this is that the assumptions made for the calculations (continuity of stream across the entire waveguide, medium is not transferred into the resonator cavity) are only a rough outline of the true processes. Vortices that are not accounted

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for in the theory will form in the experiment at Mach numbers higher than 0.01. Moreover, the efficiency of the reflectors will rapidly decrease at higher Mach numbers. There are 3 figures and 10 references: 5 Soviet and 5 non-Soviet. The four most recent references to English-language publications read as follows: R. F. Lambert, J. Acoust. Soc. America, 1956, 28, 6, 1059-1063; E. Meyer, F. Mechel, G. Kurtze, J. Acoust. Soc. America, 1958, 30, 3, 165-174; F. Mechel, Akustica, 1960, 10, 3, 133-148; R. F. Lambert, J. Acoust. Soc. America, 1956, 28, 6, 1054-1058.

ASSOCIATION: Akusticheskiy institut AN SSSR Moskva (Institute of Acoustics AS USSR Moscow)

SUBMITTED: February 2, 1961

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S/124/61/000/010/011/056  
D251/D301

9,1300

AUTHOR:

Lapin, A.D.

TITLE:

The diffraction of sound in rectangular channels in  
a waveguide

PERIODICAL:

Referativnyy zhurnal. Mekhanika, no. 10, 1961, 25,  
abstract 10 Bl36 (V sb. Prom. aerodinamika, no. 18,  
M., Oborongiz, 1960, 34-47)

TEXT: The problem is considered of the diffraction of  
sound in a rectangular waveguide which has a branch-piece in the  
form of a rectangular channel. This problem is of interest in con-  
nection with the important practical problem of decreasing the trans-  
mission of sound along a waveguide. Earlier it was solved only in  
the quasi-stationary approximation, i.e. with the condition that the  
breadth of the waveguide and branch-piece was much less than the  
wave length of the sound. From such an approximate calculation it  
follows that with the length of the branch-piece equal to a quarter

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The diffraction of sound...

of the wavelength of the sound complete reflection of the sound occurs. However, in practice, the conditions of applicability of the quasi-stationary theory are often not fulfilled. In this case, the conclusions of the theory do not agree with the results of measurement and hence it follows that the greatest effective reflection occurs with the length of the branch-piece somewhat less than a quarter of a wavelength. In the present work the exact theory is given of the diffraction of sound in a waveguide having a branch-piece in the form of a rectangular channel. Resonance branch-pieces of such a form often occur in practice. Unlike the quasi-stationary case, no boundaries are imposed on the breadth of the channel and waveguide. To solve the problem the method is used of the interlacing of fields in boundary regions, in which properties of the functions are known. The problem then leads to the solution of an infinite system of algebraic equations. The system is solved by a numerical reduction method for several values of the parameters of the waveguide and branch-piece. The optimum size of the channel for which maximum reflection is obtained and the frequency characteristics

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